

Application No.: 09/843,661
Amendment dated October 20, 2003
Reply to Office Action of June 20, 2003

REMARKS/ARGUMENTS

Claims 1-46 are pending in the application; the status of the claims is as follows:

Claims 6-46 have been withdrawn from consideration.

Claim 2 has been canceled.

Claims 1, 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Published Application No. 10-197827 (A) to Yoshihiro (“Yoshihiro”) in view of U.S. Patent No. 6,118,586 to Tanabe et al (“Tanabe”).

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshihiro and Tanabe as applied to claims 1, 3 and 4 above, and further in view of U.S. Patent No. 6,102,545 to Ogino (“Ogino”).

Please note that a Supplemental Information Disclosure Statement, along with a PTO Form 1449, was filed on June 2, 2003 (mailed to the PTO on May 29, 2003); however, we have not received a copy of the PTO Form 1449 initialed by the Examiner. Enclosed is a copy of the PTO-stamped postcard showing that the U.S. Patent and Trademark Office has received the Supplemental Information Disclosure Statement and PTO Form 1449. Acknowledgment of receipt of this document is respectfully requested.

To date, no Notice of Draftsperson’s Patent Drawing Review has been received. Applicants respectfully request receipt of this document when it becomes available. Please note that the original drawings filed in the patent application are "formal" drawings.

Claim Amendments

Claim 1 has been amended to more particularly point out and distinctly claim the invention. These changes are not necessitated by the prior art, are unrelated to the patentability of the invention over the prior art, and do not introduce any new matter.

Application No.: 09/843,661
Amendment dated October 20, 2003
Reply to Office Action of June 20, 2003

35 U.S.C. § 103(a) Rejections

The rejection of claims 1, 3 and 4 under 35 U.S.C. § 103(a), as being unpatentable over Yoshihiro in view of Tanabe, is respectfully traversed based on the following.

Yoshihiro shows a diffraction grating 102 adjacent to a “double refraction layer” 103. Tanabe shows a glass substrate having a pattern of projections and recesses adjacent to a liquid crystal layer 6. The liquid crystal layer is held in place by a second substrate 3. The second transparent substrate may be 1mm in thickness (column 4, lines 34-39).

In contrast to the cited references, claim 1 includes:

a diffractive optical element layer formed out of an optically substantially isotropic transparent sheet and having a diffraction grating surface; ...

wherein the diffractive optical element layer is made of a thermoplastic resin and is 0.1 to 1 mm thick.

The Office Action states that Tanabe shows a substrate having a thickness of 1mm. As discussed above, Tanabe states that the “second transparent substrate,” which is shown graphically as second glass substrate 3 (FIG. 1) or second glass substrate 23 (FIG. 4). However, that does not show or suggest the claimed structure. Claim 1 includes a “diffractive optical element layer ... having a diffraction grating surface ... wherein the diffractive optical element layer is 0.1 to 1 mm thick.” The second transparent substrate in Tanabe is layer 3 or 23, which do not include a diffraction grating surface, but are merely sealing layers to contain the liquid crystal layer 6 or 26. In the Examples, several glass substrates having a thickness of 1mm are described, but there is no suggestion of any thickness of any thermoplastic substrate. In addition, the use of dry etching and photolithographic techniques indicate that a thermoplastic would be incompatible with the Examples.

By using a diffractive optical element layer made of thermoplastic, the structure of claim 1 minimizes manufacturing costs (written description page 17, lines 20-22,

Application No.: 09/843,661
Amendment dated October 20, 2003
Reply to Office Action of June 20, 2003

paragraph 36). In addition, as noted in the written description at page 20, line 13 – page 23, line 8 (paragraphs 41-45), no substrate material is free of birefringent effects.

Birefringence in the substrate degrades the performance of a separator. By providing a thin thermoplastic substrate as defined in claim 1, the performance degradation of the separation device due to birefringence of the substrate is minimized. The cited references do not discuss this effect at all, much less suggest a solution to this problem.

In summary, the cited references do not show or suggest a “diffractive optical element layer … having a diffraction grating surface … wherein the diffractive optical element layer is made of a thermoplastic resin and is 0.1 to 1 mm thick.” To support a *prima facie case* for obviousness, the combined references must show or suggest every limitation of the claim. MPEP §2143.03. Therefore, claim 1 is nonobvious over the cited references. Claims 3 and 4 are dependent upon claim 1. A claim that depends from a nonobvious claim is also nonobvious. MPEP §2143.03. Therefore, claims 1, 3 and 4 are patentably distinct from the cited references.

Accordingly, it is respectfully requested that the rejection of claims 1, 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Yoshihiro in view of Tanabe, be reconsidered and withdrawn.

The rejection of claim 5 under 35 U.S.C. § 103(a), as being unpatentable over Yoshihiro and Tanabe as applied to claims 1, 3 and 4 above, and further in view of Ogino, is respectfully traversed based on the following.

Ogino shows that it is desirable for a double-side lenticular lens 17 (18, 19 FIG. 21) to have a linear expansion coefficient approximately equal to the glass substrate on which it is mounted (colum 29, lines 48-61) and that glass substrate should have a coefficient approximately equal to the LCD panel 3 (column 30, lines 5-13). However, as with Yoshiro and Tanabe, Ogino does not show or suggest a “diffractive optical element layer … having a diffraction grating surface … wherein the diffractive optical element

Application No.: 09/843,661
Amendment dated October 20, 2003
Reply to Office Action of June 20, 2003

layer is made of a thermoplastic resin and is 0.1 to 1 mm thick.” Therefore, claim 5 is nonobvious over the cited references.

Accordingly, it is respectfully requested that the rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Yoshihiro and Tanabe as applied to claims 1, 3 and 4 above, and further in view of Ogino, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

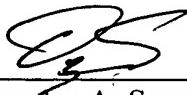
If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee,

Application No.: 09/843,661
Amendment dated October 20, 2003
Reply to Office Action of June 20, 2003

and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

By: 

Douglas A. Sorensen
Reg. No. 31,570
Attorney for Applicants

DAS/lb:jkk
SIDLEY AUSTIN BROWN & WOOD LLP
717 N. Harwood, Suite 3400
Dallas, Texas 75201
Direct: (214) 981-3482
Main: (214) 981-3300
Facsimile: (214) 981-3400
October 20, 2003

DAI 270706v4